

Claims

1. A method for measuring cyclin-dependent kinase (CDK) activity in a sample, said method comprising:
 5 i) contacting said sample with an anti-retinoblastoma protein (Rb) capture antibody and isolating the capture antibody-Rb complex;
 ii) contacting said capture antibody-Rb complex with an anti-Rb primary antibody and isolating the capture antibody-Rb-primary antibody complex; and
 10 iii) measuring the amount of CDK-phosphorylated Rb in said sample by quantitating the primary antibody present in said capture antibody-Rb-primary antibody complex.

2. The method of claim 1, wherein said CDK is CDK2.

3. The method of claim 1, wherein said CDK is CDK4.

4. The method of claim 1, wherein said method measures intracellular CDK activity.

5. The method of claim 4, wherein said method measures CDK activity in a cultured cell.

6. The method of claim 4, wherein said method measures *ex vivo* CDK activity in a cell taken from an animal.

7. The method of claim 1, wherein said CDK activity is human CDK activity.

8. The method of claim 1, wherein said capture antibody is bound to a test plate.

9. A method of identifying an agent that modulates CDK activity in a cell, said method comprising:

i) contacting an agent with said cell;
 ii) lysing said cell;
 iii) contacting said cell lysate with an anti-retinoblastoma protein (Rb) capture antibody and isolating the capture antibody-Rb complex;
 5 iv) contacting said capture antibody-Rb complex with an anti-Rb primary antibody and isolating the capture antibody-Rb-primary antibody complex; and
 v) measuring the amount of CDK-phosphorylated Rb by quantitating the amount of primary antibody present in said capture antibody-Rb-primary antibody complex;
 10 wherein said agent modulates CDK activity if the amount of said CDK-phosphorylated Rb differs from a control cell not exposed to said agent.

10. The method of claim 9, wherein said method identifies an agent that decreases CDK activity.

11. The method of claim 10, wherein said agent is identified for the treatment of a disease or condition that is improved by inhibiting cellular proliferation.

20 12. The method of claim 11, wherein said disease or condition is selected from the group consisting of cancers, autoimmune diseases, viral diseases, fungal diseases, degenerative disorders, cardiovascular diseases, stroke, inflammatory disorders, and dermatological disorders.

25 13. The method of claim 9, wherein said agent increases CDK activity.

14. The method of claim 13, wherein said agent is identified for the treatment of a disease or condition that is improved by increasing cellular proliferation.

15. The method of claim 14, wherein said agent is used to treat neurodegeneration, to stimulate wound healing, or to stimulate immune system activity

5 16. The method of claim 9, wherein said CDK is CDK2.

17. The method of claim 9, wherein said CDK is CDK4.

10 18. The method of claim 9, wherein said method measures intracellular CDK activity.

19. The method of claim 9, wherein said method measures CDK activity in a cultured cell.

15 20. The method of claim 4, wherein said method measures *ex vivo* CDK activity in a cell taken from an animal.

21. The method of claim 9, wherein said CDK activity is human CDK activity.

20 22. The method of claim 9, wherein said capture antibody is bound to a test plate.

23. The method of claim 9, wherein a plurality of agents are tested, each agent in at least one of a plurality of cell samples.

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